Backgrounder for *Piping Water Between Watersheds*

November 24, 2008

Current government policy treats major proposals to pipe water between sub-basins (i.e. 'intrabasin transfers') no differently than any other water licence applications. But sub-basin water diversions differ from typical water licences because their nature and impact are unique. The range of potentially negative impacts of intrabasin diversions is listed below. The Water Matters report, *Piping Water Between Watersheds,* argues that sub-basin water diversion proposals should be treated differently.

The Balzac controversy very publicly revealed the policy void for dealing with sub-basin-to-sub-basin diversion proposals. In that controversy, developers of the Balzac development sought to obtain water from the Red Deer River sub-basin and pipe it for use at an entertainment complex in the Bow River sub-basin. Residents in the Red Deer sub-basin strongly voiced their displeasure with the proposal. While the proposal ultimately fell through, the policy void remains.

The Balzac controversy also pointed to the challenge of a new policy context. In August 2006, the government stopped accepting applications for new surface water allocation licenses in three sub-basins in southern Alberta—the Bow, Oldman, and South Saskatchewan River sub-basins—placing greater, and perhaps unfair, pressure on the Red Deer River sub-basin, which remains open to new licence applications. Therefore, those who want a new water licence might look north to the Red Deer watershed. Meanwhile, recent approvals of basin-to-basin diversions have also involved water from the Red Deer sub-basin.

Proposals to pipe water between Alberta's seven large river basins are generally discouraged requiring legislative authority under the *Water Act*. The Legislative Assembly approved so-called inter-basin transfers in 2002, 2005, and 2007. While Alberta Environment considers a number of factors in its licensing practice, no publicly accessible policy exists that elucidates whether basin-to-basin or sub-basin-to-sub-basin diversions sufficiently account for potential environmental, socio-economic, and cumulative impacts.

To avoid negative effects of basin-to-basin and sub-basin-to-sub-basin diversions, authorities need to consider the following questions:

- What are their hydrological and ecological effects?
- What are the implications of the way Alberta defines its basins? How does Alberta compare to other jurisdictions? What is the most appropriate scale within which to move water?
- What are the socio-economic implications of sub-basin transfers in the province?

- How do we prioritize water use in Alberta?
- What is the cumulative impact of these types of diversions now and into the future?

Both basin-to-basin and sub-basin-to-sub-basin diversions mean less water for the source watershed and more water for the receiving watershed. This new water dynamic has various consequences.

Impacts to source watershed (from where water is withdrawn):

- Two to ten percent of water permanently withdrawn from a river can begin to negatively impact the river ecosystem. Withdrawals during low-flow periods (i.e., late summer through later winter in Alberta) can be especially harmful.
- Less water diminishes the physical area of aquatic habitat.
- Less water means less capacity of the river to dilute and assimilate nutrients and contaminants, thereby reducing water quality.
- Hydrological changes affect not only fish and aquatic habitat, but also can affect hydroelectric operations, flood control, navigation, recreation, and inter-provincial obligations.
- Loss of water to another watershed means loss of future opportunities to use that water within the watershed (i.e., opportunity costs), raising questions of equity.
- Moving water to another watershed can affect the source watershed's ability to respond to emergencies, such as drought.
- In the long-term, less water will be available to buffer the effects of climate change—reduced stream flows, increased evaporation, more rain in the winter and less in the summer.

Impacts to receiving watershed (to where water is used or returned after use):

- Untreated water from the source watershed can introduce non-native species to the receiving watershed. Introduced chemicals (metals, nutrients, pesticides) also can be harmful.
- Higher flows in the receiving watershed can increase erosion of riverbanks, alter the river channel, and destabilize sediment.
- More water can potentially increase the risk of flooding.
- More water allows more population and economic growth. Growth incurs costs—costs of infrastructure, servicing, and overall community footprint on the land base.
- More expensive technology and expanded water, wastewater, and delivery infrastructure—often paid by taxpayers' money—may be necessary to make the diversion feasible.